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ABSTRACT

This paper examines the redistribution impact of public higher education in California and Wisconsin. The focus is on state, rather than federal, subsidies and the undergraduate level. A study of the operation of the California higher education system indicates that income from poor and lower-middle income families is redistributed to upper-middle and high income families. These results hinge upon several parameters: the state tax structure, family income distribution of students enrolled in different schools, tuition charges, and full educational costs per student at different schools. In contrast to California, where subsidies tend to be proportional to family income, in Wisconsin, subsidies tend to be redistributive (or inversely related) to family income. Regardless of the redistributive effect, the present system tends to penalize high school graduates who do not go to college, often those from modest income families, and those who go to private colleges. It also tends to subsidize students who don't need it, and discourages young people from pursuing non-subsidized programs more appropriate to their vocational interests. (AF)

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Income Redistribution Effects of Higher Education

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Whether, and if so how, to increase the resources available to finance higher education is a question raised ever more frequently by educators, legislators, and the general public. The vast enrollment growth of the early and middle 1960's, combined with sharp price increases since then, has produced a large and continuing demand for additional resources. At the same time the revenue-generating abilities of institutions of higher education appear not to have kept pace, largely because of other rapidly growing demands on public funds. The result has been a gradually tightening financial squeeze, accentuated by recent Federal cutbacks in funds and by reduced generosity on the part of state legislators responding to campus turmoil.

Partly in anticipation of this squeeze, and partly in response to it, various proposals have been advanced that would increase the resources available for higher education. Among these proposals are an expanded

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program of state and/or federal institutional grants, income tax credits, contingent repayment student loan programs, larger amounts of conventional of student financial aid, and the like. [1,6] While all of these proposals would directly or indirectly increase the resources devoted to higher education, they would provide these resources in different ways, to different people, and with varying effects.

To evaluate the desirability of these proposals requires that we know how the present system of financing higher education operates to promote the objectives of economic efficiency and equity. This paper explores one part of this much larger topic, by providing new information on the equity or income redistributive effects of higher education. The emphasis will be on the tax-supported systems which provide substantial subsidies to young people and the parents of young people enrolled in public colleges and universities. The focus will necessarily be on the state level, since the amounts of these subsidies, who receives them, and who pays for them, are largely the result of state rather than federal policy. Moreover, because the income redistribution effects are likely to differ from state to state, we examine the results for two different states, California and Wisconsin. This requires estimating the nature and magnitude of these redistributive effects for Wisconsin, and then comparing them with a similar study for California. To keep the discussion within manageable bounds, attention is confined to undergraduate education.

I

An assessment of the redistributional impact of higher education is important for several reasons. First, it fills an important gap in our

knowledge about the redistributive effects of a large and important public program operating at the state level. [1] Second, in view of the oft-stated goal of greater equality of opportunity, such as assessment makes it possible to examine the extent to which this goal is being realized. Finally, firmer knowledge about the magnitude of income redistribution effects will be helpful in evaluating both the efficiency and equity effects of alternative proposals for the financing of higher education.

We already possess some knowledge of the redistributional effects of public higher education from a recently completed study for California [3]. First, taxpayers in general subsidize the families of young people enrolled in public institutions of higher education. Second, larger subsidies go to those families whose children are eligible for and enroll in higher-cost, higher-prestige, instituions; and it is these families who on average have higher incomes and are most able to pay. Third, higher income families do not pay commensurately higher state and local taxes in California, and so on the average, there is for higher income families a higher ratio of education subsidies to total state and local taxes paid. In summary, the operation of the California higher education system works, on the whole, to redistribute income from poor and lower middle income families to upper middle and higher income families.

These results hinge upon several key parameters: the structure of the tax system which provides funds for the support of higher education, the family income distribution of students enrolled in different schools,

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1. The need to examine the redistributive effects of government programs, in addition to the efficiency effects, has been emphasized by both Burton A. Weisbrod and James T. Bonnen [4].

tuition charges, and the level of full educational costs per-student at different schools. Because these parameters are likely to vary from state to state, it is important to replicate the California study so that the broader pattern of income redistribution effects will emerge more clearly. For example, we know that in California admission to different types of colleges depends upon high school performance, with the standards being highest at the University of California (UC), lower at the State Colleges (SC), and lowest at the Junior Colleges (JC). We also know that the subsidy received by a student is greatest at the UC, somewhat smaller at the SC, and smallest at the JC. Third, we know that admission standards give rise to different types of student clientele at each of the three systems, with on average the UC having the highest income students and the JC having the lowest income students. Finally, we know that because of its state income tax, California's overall tax structure is less regressive than that of most other states.

Many states would serve as good candidates for comparison with California, but lack of data, paricularly on the incidence of taxes by family income level, greatly reduces the number of states that can be considered. Indeed, the only state for which reasonably good data are now available is Wisconsin. Since Wisconsin, like California, relies partly on an income tax, it would be most interesting to compare still another state which relies heavily upon sales taxes as a source of revenue.[2]

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2. A recent study for Florida indicates the public higher education redistributes income from lower to higher income groups. Since the data and methodology of the study differ, the Florida results cannot be compared with those here [7]. Another study indicates that the income redistribution effects of higher education in Canada are negligible [5].

We turn now to estimate the income redistributive effects for 1964-65 of higher education in Wisconsin, focusing on the two state-supported systems -- the University of Wisconsin system and the Wisconsin State Universities system. The value of the subsidy available to a Wisconsin resident who is a student in one of these systems is the difference between tuition and the full costs of college education.[3] The costs of college are taken to include not only instructional costs but also operational and capital costs.[4] Despite differences in the apparent "quality" of the UW and WSU systems, the full institutional costs were approximately equal, at $1,200 per academic year. Since tuition amounted to $300 at the UW and to $190 at the WSU,[5] net per-student institutional costs -- or the subsidies per student -- amounted to $900 and $1,010, respectively. The effect of this tuition differential is to provide larger net subsidies to WSU students and their families than to UW students and their families.

The ability-to-pay of families and students differs in the two systems, as indicated by the median family income levels. Families of UW students report median incomes of $9,700 per year in 1964-65, consider-

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3. Throughout the paper, we are concerned with "in-state" students -- Wisconsin residents who were paying about 20 percent of instructional costs. "Out-of-state" students were paying approximately 100 percent of instructional costs.

4. For instructional and operating costs we rely upon the traditional college accounting data. The cost of the services provided by capital (buildings and equipment) are far more difficult to estimate with precision; rough estimates have been developed for use here.

5. Actually, the "tuition" figures include both "tuition and fees." Since tuition (payment for instructional costs) is less than total tuition and fees, the subsidies are slightly understated. The impact of state scholarships, based largely on financial need, cannot be estimated because of the lack of adequate data.

ably higher than the $6,500 estimated family income of WSU students. Because Wisconsin's state tax system is progressive over this income range, the tax contribution differs considerably for the median families with students in these two systems. [6]

Information on the single-year subsidies, family income levels, and state taxes can now be put together to show the redistributive effects of Wisconsin's publicly supported system of higher education. Lines 1 to 5 in Table 1 are self-explanatory. Line 6, labeled "Net Transfers" refers to the difference between the subsidy received and total state taxes paid in that year. It is important to remember that Wisconsin taxes go to defray the costs of a wide array of state-provided services, including some revenue-sharing with local communities. Hence, the state taxes included here do not reflect the taxpayer contribution to higher education alone; unfortunately, there is no easy way to determine what portion of a family's taxes is used to provide any particular service, such as higher education. At the same time it is clear that taxes are generally paid over many years while college subsidies are received only while the student remains in college.

Several interesting results emerge from Table 1. First, families with children in college are subsidized--at least temporarily--by families

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6. The state tax structure in Wisconsin is more progressive than in most states. The marginal tax rate rises from 4 percent at the $3,000-4,000 level of net taxable income to 8 percent at the $14,000 level of net taxable income, and rises to a tax of 10 percent. However, the average rates based on gross income, the nearest equivalent to family income, are considerably lower and less progressive, rising from slightly about 4 percent at the $3,000 level to about 5 percent at the $18,000 level, and then stabilizing at slightly above that level.

who do not have children in college; this includes some families with children of college age not in college. Second, the largest annual subsidies go to WSU students, as already noted; in addition, as a percentage of family income these subsidies are even more favorable to WSU students compared to UW students. Third, the absolute amounts of the net transfers are higher for WSU students than for the generally more affluent UW students.[7]

How do these results compare with those for California? To answer this question, several adjustments must be made in the California data [3, Chapter 4]. One requires that the Junior College system be excluded because, as of 1964-65, Wisconsin had no comparable two-year college system.[8] This adjustment necessitates another one, the exclusion of local taxes which in California provide substantial support fot the JC system.[9] Thus, our comparison is limited to the two major systems in each state and to those fully dependent upon state financing.

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7. Were the state tax structure more regressive, through greater reliance on sales taxes, then net transfers would be less redistributive for WSU students and their families vis-a-vis UW students. However, the redistribution from the non-college population to the college-going population would be even greater than it is now.

8. With the full emergence of the vocational-technical college system several years ago and with the availability of new data, it should soon be possible to update the Wisconsin results and also to broaden them to include all post-secondary undergraduate education in Wisconsin.

9. Despite this adjustment, the comparisons still leave something to be desired on the tax side. For example, Wisconsin uses its taxing power to share revenue with local units, while this reduces the local property tax rate, it increases the state rate. In addition, both states provide some support for their third-level systems -- JC's in California and vocational-technical schools in Wisconsin.

Table 1

Average Family Incomes, Average Higher Education Subsidies Received, and Average State Taxes Paid by Families, By Type of Institution Children Attend In Wisconsin, 1964-65

	All Families	Families Without Children in Wisconsin Public Higher Education	Families with Children Enrolled in Wisconsin Public Higher Education	
			Univ. of Wisconsin	Wisconsin State Univs.
	(1)	(2)	(3)	(4)
1. Average Family Income	6,800	6,500	9,700	6,500
2. Average Higher Education Subsidy Per Year	--	0	900	1,010
3. Average Subsidy as a Percent of Family Income	--	0	9.3	15.8
4. Average State Taxes Paid	240	240	430	270
5. Average State Taxes Paid as a Percent of Family Income	3.6	3.6	4.3	4.1
6. Net Transfers (line 2-line 4)	--	-240	+470	+740

Source: Based on unpublished information from University of Wisconsin, Wisconsin State Universities, State of Wisconsin Department of Administration, and State of Wisconsin Department of Revenue, and on estimates by the author.

The contrasts between the two states are sharp, as revealed by a comparison of Tables 1 and 2. Subsidies per-student are substantially higher in California, in part because of lower tuition (essentially zero at that time) and in part because of larger expenditures per student. More interesting is the finding that subsidies tend to be proportional to family income of students in the two California systems (Table 2, row 3) but are redistributive (inversely related to family income) for students in the two Wisconsin systems. Net transfers -- which reflect the structure of state taxes as well as subsidies -- are also proportional to family income in California. In Wisconsin, however, the higher level of taxes paid and the wider differences in family incomes of students combine to make net transfers relatively more redistributive between the two systems than are net subsidies alone. Hence, the Wisconsin system might be termed more egalitarian than the California system for those people attending college

II

If we now broaden our view to take account of all public post-secondary schooling, we would find that both states provide substantial subsidies to well over half of their recent high school graduates -- those going to public colleges. Many of these students, moreover, avail themselves of these subsidies for more than a single year of college; and in general the higher the family income the more likely the student is to complete college. But, no subsidy whatsoever goes to the rest of the high school graduates who do not attend public colleges. Many of these young people come from families with modest incomes. Whether they fail to attend college because they are not accepted for admission, because they are not encouraged to enroll in college, or because they simply prefer not to attend, the fact remains that they receive no subsidy at all. Neither, of course, do the more affluent who prefer enrolling in private schools.

Table 2

Average Family Incomes, Average Higher Education Subsidies Received, and Average State Taxes Paid by Families, By Type of Institution Children Attend in California, 1964-65

	All Families	Families Without Children in California Public Higher Education	Families with Children Enrolled in California Public Higher Education	
			Univ. of California	California State Col.
	(1)	(2)	(3)	(4)
1. Average Family Income	8,000	7,900	12,000	10,000
2. Average Higher Education Subsidy Per Year	--	0	1,700	1,400
3. Average Subsidy as a Percent of Family Income	--	0	14.2	14.0
4. Average State Taxes Paid	192	182	350	260
5. Average State Taxes Paid as a Percent of Family Income	2.4	2.4	2.9	2.6
6. Net Transfers (line 2-line 4)	--	-180	+1,350	+1,140

Source: Adapted from Table IV-12, p. 76 in W. Lee Hansen and Burton A. Weisbrod, Benefits, Costs, and Finance of Public Higher Education.

The existence of this pattern of income redistribution through the public expenditure system, as well as through the tax system, has long been suspected even if not fully documented. Paradoxically, the most common justification for the redistribution in the case of higher education is that it helps to achieve greater equality of opportunity. The lower the tuition, the easier it is for students to attend. But low or even zero tuition has still not been sufficient to permit sizeable number of young people, particularly from lower income families, to attend public institutions. What has happened is that low tuition provides a large subsidy that is given out indiscriminately to every enrolled student, on the grounds that anyone enrolling is deserving of a subsidy. But when public funds for subsidies are limited, as they inevitably are, the proper question is: Who needs them the most? By and large, the need is greater for qualified students from lower income families, many of whom now either do not go to college at all or if they do go, are more likely to drop out early and/or to incur substantial debt while in school.[10]

Another part of the justification for low tuition and the income redistribution which it promotes hinges on the external benefits that are presumed to result from higher education. The reasoning is that because these benefits accrue to society as a whole, society should in effect compensate through general tax support those going to college. But this appealing and frequently-heard argument stems from a faith in rather than firm knowledge of the existence of and possible magnitude of these external benefits. While the research activities of college and universities, for

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10. See [2] for a fuller discussion of the low-tuition argument.

example, may produce sizeable external benefits, it is much more difficult to make a similar case for undergraduate education. I myself am skeptical about the external benefits justification. Until better evidence on these benefits is forthcoming, this justification for general tax support continues to be a weak one.

From another point of view, it may be argued that, if a longer time period is considered, little or no actual subsidization of college students occurs. Because higher education leads to higher incomes, it is argued, students will in later life pay substantially more tax revenue to the state and in its taxpayers, in effect, repaying the value of the subsidies received during their college years. But whether the amount expected to be repaid is sufficient to offset the subsidies received is an empirical question. [11] The present value of additional state and local taxes expected to be paid in California falls considerably short of the present value of the subsidy received by either male college graduates or those males completing only two years of college [3, Chapters 2 and 4]. The gap between future tax payments and subsidies would be even greater if the calculations were repeated taking account of state taxes only. For Wisconsin it also appears that the subsidies would be only partially offset by the additional future tax payments to the state. [12] What accounts for the gap is that the combined effect of the additional taxable

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11. Also at issue is the extent to which additional schooling can be associated with additional earnings, although the evidence seems to be reasonably favorable on this point.

12. Based on calculations made by the author.

income associated with (or resulting from) college-going, the level of state tax rates, and the progressivity of the tax structure, is not great enough to produce a sufficient lifetime increment to tax revenue. In any case, the gap would be expected to be smaller in Wisconsin than in California because the former's subsidies are smaller and the effective state tax rates are higher. The difficulty in recouping past public subsidies is compounded, however, because considerable numbers of young people who benefit from higher education subsidies migrate from the state and in this way escape all or at least a part of the repayment via taxes.

In our focus on the public sector, there has been no discussion about the equity of a system whereby parents of students attending private colleges and universities contribute tax revenues which help to support public higher education even though these families receive no direct subsidies themselves. Concern about this group has been somewhat less widespread, largely, it would seem, because smaller numbers of people are involved -- only about 10 percent of the actual college-going population. Yet application of the low tuition and tax repayment arguments would, in the interests of symmetry, also call for the subsidization of students in private higher education. In the absence of such subsidization, a redistributive effects occurs between families with children in public and those with children in private colleges. But the extent of concern about this redistribution is lessened by two factors: private school students tend to be from wealthier families who can more easily afford to pay the costs of higher education; in addition, a conscious decision has been made not to attend a public

institution offering a subsidy.[13]

The equity of a system of restricted subsidies to college-going young people has received little attention. Such a system seems to assume implicitly that college-going is the primary, if not the sole, means of enhancing potential earning power and/or the prospects for a satisfying, enriched life. But at least roughly similar beneficial effects seem likely to result from other types of education and training programs, among them technical training courses, conservatory programs, apprenticeships, on-the-job training, and the like.

What the existing subsidy system does is to encourage individuals to invest in higher education by making higher education relatively inexpensive. Meanwhile, young people who may recognize the inappropriateness of college to their own vocational aspirations are discouraged from pursuing alternative programs because they must pay the full (unsubsidized) costs of these programs. Yet these young people and their parents, who on average are less able to pay, continue to be taxed to support the college training of others.

In the interests of promoting greater equality of opportunity as well as widening the options open to young people, eligibility for public subsidies should be broadened to include other types of education and training in addition to college. Ample precedent exists in the GI Bill and manpower training programs for enlarging the range of programs in which students can be subsidized. If a broadened subsidy program is to be

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13. In 1965-66 Wisconsin instituted a subsidy program to resident students enrolled in private colleges in the state. A maximum grant of $500 per year was made available, to be based on family ability to pay. Families with "effective incomes" of less than $2,000 qualified for the full $500; the subsidy declined at a steady rate such that at an effective income of $10,000 no subsidy was received. The program has been raised somewhat since then.

considered, however, we must again confront the question of financing -- whether through additional public funds or through a redistribution of the subsidies now received by the college-going population.

III

This paper attempts to indicate the nature of the income redistribution effects of the public financing of higher education. The purpose has been to develop a base against which to compare the effects of alternative proposals for the financing of higher education. How the different proposals stack up in beyond the scope of this paper. What seems clear, however, is that the redistributive effects favor by and large the upper middle and upper income groups at the expense of the lower middle and lower income groups. Whether society wants to continue to produce these redistributive effects through its current methods of financing higher education remains to be answered.

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